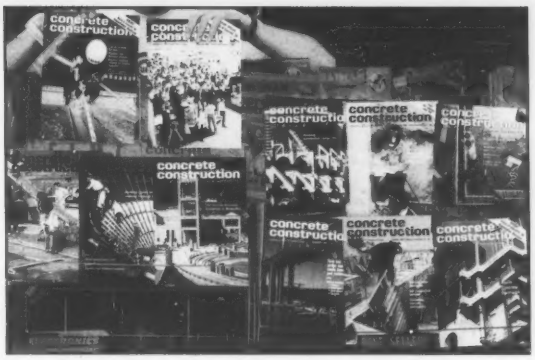

Annual Index of Articles: 1989

ADMIXTURES

Check Your Admixtures after Winter Storage: Freezing can damage some admixtures. This article tells how to revive a frozen admixture and how to check for admixture uniformity. **2 pp; 89:320**

Permeability of Concrete: High-range water reducers, silica fume, and latex emulsions can make concrete less permeable to liquids, gases, and ions that can cause deterioration. **2 pp; 89:870**

Using Admixtures Successfully: Choose the best admixture program for an application by defining performance goals, understanding admixture effects, and using uniform procedures. **3 pp; 89:113**

ALKALI-SILICA REACTION

Countering Alkali-silica Reaction in Concrete: Alkali-silica reactions (ASR) were never a problem in Britain before 1976. Then researchers found 100-300 structures they believed were affected by it. The presence of ASR doesn't necessarily mean the concrete was of low quality or that the structures had failed. Cracking was a problem however. One way to control ASR is to limit the alkali content of concrete made with potentially reactive aggregates. **3 pp; 89:948**

ARCHITECTURAL CONCRETE

Board Marked Concrete Made to Order: A photo essay on board marked architectural concrete of the Orlando Public Library shows closeups of wood-grain texture. Building duplicates style and texture of the 20-year-old library so that new and old construction merge in a monumental city block of architectural concrete. **3 pp; 89:140**

Brick-look Concrete: A special brick-design paper pattern and dry shake color hardener are used to make concrete flatwork that looks like brick. **3 pp; 89:316**

Forming Convention Center Fins: Intricate pattern of recesses in the arches and beams of the 100-foot-high fins presented a formwork challenge to builders of the San Diego Convention Center. Custom steel forms were carefully detailed to establish crisp smoothness in the white architectural concrete. **4 pp; 89:537**

Marketing: The Beauty of Concrete Gets Attention for Products and Services: How manufacturers, suppliers, and associations are using beauty of concrete in current marketing efforts. Includes color reproductions of numerous brochure covers. **3 pp; 89:478**

Precast Matches Old Marble: The Harvard Medical School's new building received a Precast/Prestressed Concrete Institute design award for its use of architectural precast concrete which matches the classical buildings around it in a contemporary way. This building completes a quadrangle started in 1906. The center atrium is now enclosed. **2 pp; 89:866**

Rosenthal Library Combines Precast with Cast-in-place Work: Award-winning Rosenthal Library at Queens College, New York, combines cast-in-place and precast concrete in a beautiful and functional structure. Fast-tracking, flexibility, and other advantages of concrete are described. **3 pp; 89:441**

Who Says Concrete Is Beautiful? Shows varied examples of beautiful concrete submitted by *Concrete Construction* readers. Included are precast pavers in driveways, tilt-up sound barrier walls, an outdoor gallery for display of sculpture, a bridge in Michigan, an underground tank, and a corporate headquarters in white concrete. **4 pp; 89:459**

Winning with Concrete: A pictorial essay presenting varied award-winning structures. Includes a parking deck, condominiums in Florida, a California car wash, the World Bank building in Washington, DC, and a floodwall on the Mississippi River. **6 pp; 89:467**

ART

Alice in Wonderland Image Hidden in Concrete: Sculpture of Alice and the White Rabbit is made from colored precast concrete sections. **2 pp; 89:162**

Formwork Becomes Art at National Building Museum: Artist and journeyman carpenter Linda Wysong created a performance sculpture called *Moving Circles—Art at Work.* Setting up the all-steel and steel-and-plywood panels and accessories took 2½ days. The assembly of the project was the art, not the finished product, which was taken down 3 days after it was finished. **2 pp; 89:586**

Painting In and On Concrete: New York artist Glenn Booth paints in and on thin concrete panels, beginning with pigment rubbed in while the concrete is wet. His technique is described and two paintings, one framed in concrete, are shown. **2 pp; 89:475**

BASEMENTS

Field Investigation of Residential Basement Problems: Suggests using a checklist to check basement problems such as cracking and leaking. Lists many questions to ask about the construction and history of the basement to determine what kind of repair will be necessary. **4 pp; 89:985**

The First Steps in Building High-quality Poured Wall Foundations: Many color photographs help explain details of excavating that basement wall contractors should look for and how to build footings. Also includes methods for squaring foundation corners. **5 pp; 89:849**

BRIDGES

Cable-stayed Bridge Completed across James River: Cable-stayed James River Bridge in Virginia, with a main span of 630 feet, is made up of twin segmental precast box girders. A series of transverse precast delta frames located at the section where the stays are anchored into the deck permits loads from both box girders to be transferred into the plane of suspension. Two single-shaft pylons carry the system of 13 stays. **3 pp; 89:775**

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Forming Convention Center Fins: Intricate pattern of recesses in the arches and beams of the 100-foot-high fins presented a formwork challenge to builders of the San Diego Convention Center. Custom steel forms were carefully detailed to establish crisp smoothness in the white architectural concrete. **4 pp; 89:537**

Formwork for Cone, Funnel, and Cylindrical Structures: A reusable system forms cones, funnels, and other symmetrically curved structures using self-supporting steel brace elements with small plywood panels wedged between them. Cylinders are formed with a movable assembly of rigid rings supporting steel sheathing. No form ties are needed and concreting is often continuous without cold joints. System was used recently to build the award-winning Castle Syke water tower in England. **3 pp; 89:369**

Self-lifting Forms: Self-lifting forms, either roll-around or post type, speed construction of columns and spandrels in high-rise buildings. Operation of both types is explained and suggestions are given for maintenance and efficient phasing into the construction cycle. **4 pp; 89:919**

Use Breakeven Analysis to Choose the Lowest Cost Forming Option: Control job forming costs by considering the number of form reuses needed. Classify costs as fixed or variable and determine the most economical forming solution by using breakeven analysis. **5 pp; 89:121**

HISTORY

Concrete Homes of Yesterday: Pictures and short accounts of some historic concrete houses built between 1850 and 1935. Included are Barrett's gravel wall house in Ohio; Horace Greeley's barn, converted to a residence; Ward's Castle; Mercer's Fonthill in Pennsylvania; an early 20th-century concrete block home; houses by Edison and others, built with modular metal forms; and Frank Lloyd Wright's world-famous Fallingwater. **5 pp; 89:719**

Hawaiian King's Public Building Restored: Details on the oldest reinforced concrete public building in the United States still standing and still in use. **1 p; 89:186**

HOT WEATHER CONCRETING

Economical Cooling of Hot Weather Concrete: It's best to cool the aggregate to control concrete temperature during hot weather. Aggregate piles can be cooled by evaporation and by spraying the piles directly with a cold water stream. Describes how to use heat balance calculations to find the right mix temperature for different cooling options. Shows how to choose the best cooling option for your application. **4 pp; 89:791**

INDEX

Concrete Construction *Subject Index: 1988:* Listing of 1988 articles in *Concrete Construction* arranged by subject. **17 pp; 89:192**

INSPECTION

Abseiling Speeds Exterior Building Inspection: A mountaineering technique replaces conventional access by scaffolding and platforms for building inspection. **2 pp; 89:32**

JOINTS

Repairing Joints in Industrial Floors: Gives an illustrated overview of the four main types of industrial floor joint problems and how to repair them. Covers plastic crack-inducing strips, left-in-place metal keys, elastomeric sealants, and high-strength fillers. **4 pp; 89:548**

LASERS

Machine Control by Laser: Laser-controlled machines save time and labor in grading, cutting, digging, and finishing operations. This article tells how the system operates. **3 pp; 89:132**

LIFT SLAB

Walls and Slab Lifted in Texas: Describes the first U.S. use of a site-cast tilt-up concrete system designed by Mexican structural engineer Pablo Cortina. Involves placing wall and roof panels on foundation floor slab, then lifting roof slab with wall panels connected to it on plastic hinges. The wall panels open up close to final position. **3 pp; 89:861**

MANAGEMENT

Advances in Computerized Estimating: The article describes a program that speeds up computerized estimating. **1 p; 89:315**

Changing Your Type of Work—Even a Little—Is Risky: Contractors must be cautious of making small and large changes in their work. Their specialties have always brought them success—variations in their formula might not. Describes the danger of switching between public and private work and between union and nonunion work. **3 pp; 89:802**

Construction Claims: How to Keep Them from Degenerating into Disputes: Construction claims should be as ordinary as insurance claims. Article gives hints for reducing the likelihood of construction claims degenerating into legal disputes. **3 pp; 89:951**

The Fiscal Physical: How to use financial ratios to check the financial health of your company. **4 pp; 89:40**

Growing Businesses Can Fail Without Accurate Accounting: You can only make good management decisions with accurate financial information. Recording payables late, in the wrong month, or worse, wrong fiscal year, gives you a false financial picture. **3 pp; 89:1011**

Growing Up Alongside Your Construction Firm: As a company grows, its management needs change. Suggests ways to recognize the need for change and how to go about it. **2 pp; 89:944**

How to Expand Your Business into a New Location: Expanding a construction business into new geographic areas is risky and the second leading cause of contractor failure. Article describes dangers to avoid and suggests having a withdrawal plan in case a regional office doesn't show expected profits. **5 pp; 89:736**

How to Get Paid for Undisclosed Surprises on the Job: Learn how contractors can get paid when an owner holds back superior knowledge about jobsite conditions that cost extra money to fix. **2 pp; 89:582**

How to Lower Workers' Compensation Costs: A list of tips on reducing workers' compensation costs. **1 p; 89:328**

How to Manage Cash Efficiently: Provides hints for keeping cash available. Suggests using a lockbox service to receive payments so they get into your banking account faster. **2 pp; 89:484**

IRC Section 2036(c) Drops the Bomb on Family Businesses: The new 1987 tax code makes it trickier for parents to give a child their construction business and avoid estate taxes. Lists what to watch for and how to get around it. **2 pp; 89:882**

Losing a Key Person Sends You Back to Step One: Losing any of the people who are primarily responsible for estimating/sales, field operations, or accounting/management is risky for a construction business. Describes how to identify key people and what to expect from their replacement. **2 pp; 89:874**

Myths about Wage-hour Laws: Making wrong assumptions about the federal wage and hour law can be costly to contractors. Six common misbeliefs are described. **2 pp; 89:184**

Planning Is the Key to Building More Efficiently: All jobs should have a written plan describing all details necessary to make the job go smoothly. Includes suggestions on how to work with suppliers and subcontractors. Recommends that project managers and superintendents walk the job regularly and hold weekly meetings. **2 pp; 89:806**

Proving Claims with Pictures: Using visuals helps build a believable case for damages in the event of a delay, disruption, termination, change order, or change of conditions. **1 p; 89:188**

(more)

Expanded Polystyrene Wall Forms: Concrete house walls are cast in formwork made of expanded polystyrene foam insulation which remains as a permanent part of the wall. Several commercially available forming systems provide 2-inch layers of insulation connected by plastic or galvanized ties unique to each system. Concrete cures under ideal conditions, and the home benefits from energy saving insulation. Various finishes can be used for both interior and exterior walls. **4 pp; 89:697**

Home Built with Wood Fiber Concrete Panels: Hollow core panels of sawable, nailable wood fiber concrete form walls and partitions for a 1,200-square-foot house built in Phoenix, Arizona, at a reported cost of about $25,000. Concrete mix, panel fabrication, and house erection are described. Construction cost breakdown sheet helps builders estimate cost in their own areas. **4 pp; 89:703**

RETAINING WALLS

Retaining Wall System Offers Economy, Speed of Construction: A patented, precast retaining wall system goes up fast. Article describes installation at a shopping mall. Because the precast wall isn't as massive as a conventional structure, costs for removing or relocating part of the structure aren't as high as for other systems. **2 pp; 89:398**

ROLLER COMPACTED CONCRETE

RCC Paving Record Set: The largest roller compacted concrete paving job (420,000 square yards) was installed during the summers of 1988 and 1989. Describes the mix used and methods of placement and curing. Research was started on some air-entrained RCC pavements at this site. **3 pp; 89:373**

SAFETY

How to Safely Use Powder-actuated Tools: Describes precautions to take when loading, using, and storing powder-actuated tools and the powder loads. Operators must be trained by an authorized instructor—usually the manufacturer. OSHA and ANSI have rules for use of these tools. **2 pp; 89:637**

OSHA's New Rules for Crane-suspended Personnel Platforms: In October 1988, OSHA issued a new standard to specify the design, construction, testing, and maintenance of frame-suspended personnel work platforms (or man-cages). "Riding the hook" is still illegal, but workers may be hoisted in man-cages if OSHA's regulations are followed (described in article) and there's no other way to do the job. **6 pp; 89:560**

SAWING

Dry-cutting Saws Allow Pile Cutting in Cold Weather: By allowing workers to cut concrete piles in cold weather, dry-cutting, air-powered saws helped keep a pile driving project on schedule. **2 pp; 89:653**

Wire Concrete Saw Proves Its Mettle: A concrete saw uses wire studded with diamond beads to cut thick sections of concrete using very little water. A pulley system connects the wire to a power unit. **3 pp; 89:310**

SEALERS

Kansas Study Questions Silane Sealer Effectiveness: A study by the Kansas DOT found that silanes didn't keep salt out of bridge decks any better than linseed oil treatments. Asphalt sealers seemed to work well. **2 pp; 89:324**

SHOTCRETE

Shotcrete Restores Fire Island Light: Steel-fiber-reinforced shotcrete has replaced a 1912 layer of reinforced concrete protecting the brick structure of the Fire Island Lighthouse. Public donations paid for restoration of the historic 1858 light. **2 pp; 89:400**

SLABJACKING

Raising a Floor without Closing the Store: Using button bit drills and a newly designed grout pump, a contractor slabjacked a retail store floor. The job was done during three late-night 8-hour periods when the 24-hour store was closed. All the shelves of merchandise stayed in place. The slabjackers had to use their hands and feet to feel whether or not the slab was moving into place—floor tiles covered the slab and shelves blocked other visual clues. **2 pp; 89:640**

SOIL COMPACTION

Soil Compaction in Residential Construction: Compacting soil during construction costs much less than correcting settlement problems after they occur. Learn why and where soil compaction is needed and which equipment to use for which types of soils. **3 pp; 89:855**

TESTING

Directory of Specialized Concrete Evaluation and Testing Services: Listing shows names of firms that provide specialized evaluation or testing services to the concrete industry. Firms are listed by state. **13 pp; 89:34**

Fast Field Test for Chloride Ion: Rapid field test method for chloride in concrete uses drilled-out dry powder samples, immersing them in an extraction solution. Quick readings taken at 1 to 10 minutes give immediate guidance to the investigator. Chloride content values approaching those of the standard acid titration method can be obtained after the sample has been in the extraction solution 24 hours. Case histories show method in use on parking decks and a bridge. **4 pp; 89:644**

Uniform Strength Test Results Reduce Concrete Cost: Strength test results from ready mixed concrete batches are used to estimate concrete uniformity. More uniform concrete requires less overdesign and reduces concrete cost. ACI has a computer program that helps you quickly check your progress. **4 pp; 89:727**

TILT-UP

Tilt-up Fights Noise Pollution: Tilt-up method was used to build a mile of sound barrier walls along a busy Winnipeg thoroughfare. Panels from 7 to 14 feet high were slipped into slots in the supporting cast-in-place columns. The stack-cast panels have exposed aggregate on one face and fractured ribs on the other. **4 pp: 89:999**

Using Tilt-up for Salt Storage Saves Money: It's less expensive and faster to built salt storage buildings from tilt-up construction than igloo-type wood-frame. **1 p; 89:591**

TOOLS

Choosing the Right Jackhammer Tool for the Job: Each jackhammer tool has a correct use. Article describes how to use breakers, cutters, spades and frost wedges, bushing tools, and drivers and tampers. **3 pp; 89:631**

Hand-held Hydraulic Tools for Contractors: The article gives advantages of hydraulic tools and describes power source requirements. It also tells how to use an existing power source to run hydraulic tools and gives cost information. **4 pp; 89:295**

WHITETOPPING

Owners Choose Concrete Parking Lot to Reduce Costs: Whitetopping was eventually chosen over repaving with asphalt or concrete for part of a church warehouse parking lot. Concrete reconstruction was the first choice, but as construction began, the site conditions made it much more expensive than first thought, so whitetopping which wasn't originally considered was done instead with good results. **3 pp; 89:995**

Whitetopped Parking Lot Report Card: Describes five sites that were whitetopped and how they are doing. The oldest is 8 years old. Heavily illustrated, this overview shows that whitetopping has reduced life-cycle costs and that the pavements are performing well. **5 pp; 89:380**

Whitetopping Demonstration at the Silverdome: Team approach to concrete promotion was used in a cooperative whitetopping demonstration at the Pontiac, Michigan, Silverdome where 3½ inches of concrete was placed over badly deteriorated asphalt. How and why to use teamwork like this were explained at a World of Concrete® '89 seminar and documented in seminar handout. **3 pp; 89:305**